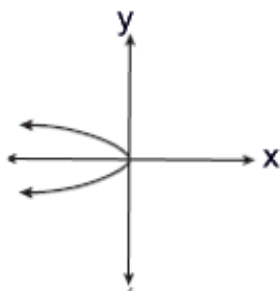# Review Packet: Linear Functions and Equations
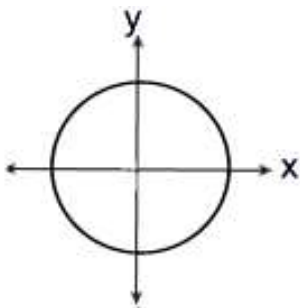
Name: _____ Date: _____

**Directions:** Write ALL vocab that describes each graph. [Function or Not a function, Linear or Non-Linear, Discrete or Continuous, Increasing or Decreasing or Both or Neither]
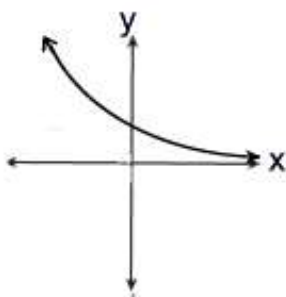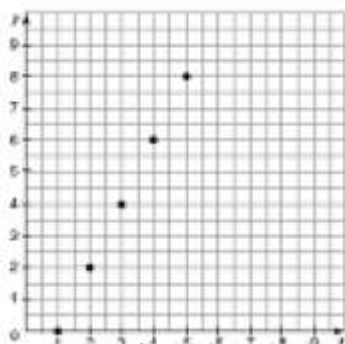
**Directions:** For questions 5-9, find the *rate of change* and *y-intercept*, then *write the equation* represented by the table.

1.



2.



3.



4.



5.

| x | y |
|---|---|
| 3 | 5 |
| 4 | 7 |
| 5 | 9 |
| 10 | 19 |

6.

| x | y |
|---|---|
| 150 | 635 |
| 125 | 565 |
| 100 | 495 |
| 75 | 425 |

7.

| Distance (miles) | Charge (dollars) |
|---|---|
| 1 | -13 |
| 3 | -.5 |
| 4 | 5.75 |
| 8 | 30.75 |

8.

| x | 0 | 2 | 4 | 6 |
|---|---|---|---|---|
| y | 0 | 2 | 8 | 18 |

9.

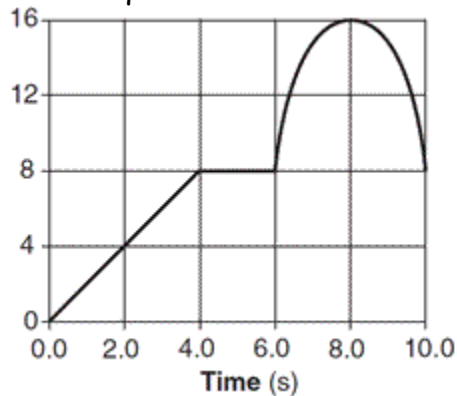| Time from Leaving Dorm (hours) | Distance from Milepost 0 (miles) |
|---|---|
| 0.5 | 230 |
| 3.0 | 375 |

**Directions:** For problems 10 – 12 determine if the equation is linear or non-linear.

10.  $3x^2 - 8x + 12 = y$

11.  $y = -{}^1/_2x + 7$

12.  $y = \dfrac{9}{x}$

**Directions:** Use the graph below to answer questions 13 – 14.



13.  Describe what is happening in this distance v time graph.  (When is the object at rest? When is it increasing/decreasing? When is it at a constant speed and when is it accelerating? etc).

14.  What is the speed of the object from 0 – 4 minutes?

**Directions:** Use the following information for problems 15 – 16.

Mario has begun researching phone billing plans.

Phone Company A charges a flat rate of $75 a month.  A flat rate means that your bill will be $75 each month with no additional costs.

The billing plan for Phone Company B is a function of the number of texts that Mario sends each month.  The table below represents the number of texts and the total cost of the bill for the month.

| Input (number of texts) | Output (cost of bill) |
| --- | --- |
| 50 | $50 |
| 150 | $60 |
| 200 | $65 |
| 500 | $95 |

15.  If Mario sends 150 texts in a month, which phone company would have the better plan?

16.  If Mario sends 500 texts in a month, which phone company would have the better plan?